

IN THE CLAIMS:

1-9. (Cancelled)

10. (Currently Amended) ~~[[The]]~~ A light source of Claim 9, comprising:

a fluorescent lamp having a phosphor layer with at least 70% of wherein the phosphor layer contains, as major components being a combination of:

a phosphor containing bivalent ~~Europium~~ europium as an emission center and having a peak emission at a wavelength range of 440nm to 470nm;

a phosphor containing bivalent manganese as an emission center and having a peak emission at a wavelength range of 505nm to 530nm;

a phosphor containing trivalent terbium as an emission center and having a peak emission at a wavelength range of 540nm to 570nm; and

a phosphor containing trivalent europium as an emission center and having a peak emission at a wavelength range of 600nm to 620nm~~[[.]]~~ ;

whereby the light emitted has a whiteness no smaller than 85 with a visual clarity index no smaller than 100, the whiteness W being calculated according to the equation:

$$W = -5.3C + 100$$

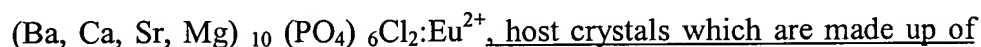
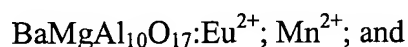
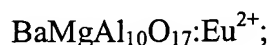
where C is chroma of the light calculated as defined by the CIE 1997 Interior Color Appearance Model (simple version); and

the ratio of radiant energy Q_v to radian energy Q_g satisfies an inequality for a correlated color temperature T (K):

$$\underline{Qg/Qv \geq -0.11 \times 10^4 / T + 0.30}$$

where Qg is radiant energy with a wavelength in the range of 50.5 nm to 530 nm,
and Qv is radiant energy with a wavelength in the range of 380 nm to 780 nm.

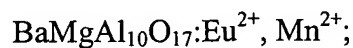
11. (Currently Amended) The light source of Claim 10,
wherein the phosphor containing the bivalent europium as an emission center and
having a peak emission at a wavelength range of 440nm to 470nm is composed of at least one of:



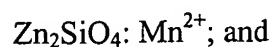
Ba, Ca, Sr and Mg;

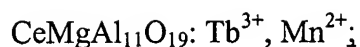
wherein compounds on the left side denote host crystals, and ions on the right side
are emission centers contained in the phosphors.

12. (Currently Amended) The light source of Claim 10,
wherein the phosphor containing the bivalent manganese as an emission center
and having a peak emission at a wavelength range of 505nm to 530nm is composed of at least
one of:



Zn;

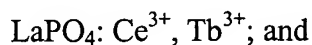




wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

13. (Original) The light source of Claim 10,

wherein the phosphor containing the trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

14. (Original) The light source of Claim 10,

wherein the phosphor containing the trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

15. (Currently amended) ~~[[The]] A light source of Claim 9, comprising:~~

a fluorescent lamp having a phosphor layer with at least 70% of wherein the phosphor layer has, as major components being a combination of:

a phosphor containing both bivalent europium and bivalent manganese as emission centers and having emission peaks both at a wavelength range of 440nm to 470nm and at 505nm to 530nm;

a phosphor containing trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm; and

a phosphor containing trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm[.];

whereby the light emitted has a whiteness no smaller than 85 with a visual clarity index no smaller than 100, the whiteness W being calculated according to the equation:

$$W = -5.3C + 100$$

where C is chroma of the light calculated as defined by the CIE 1997 Interior Color Appearance Model (simple version); and

the ratio of radiant energy Q_v to radian energy Q_g satisfies an inequality for a correlated color temperature T (K):

$$Q_g/Q_v \geq -0.11 \times 10^4 / T + 0.30$$

where Q_g is radiant energy with a wavelength in the range of 50.5 nm to 530 nm, and Q_v is radiant energy with a wavelength in the range of 380 nm to 780 nm.

16. (Currently Amended) The light source of Claim 15,

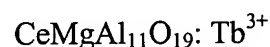
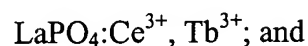
wherein the phosphor containing the bivalent europium and bivalent manganese as emission centers and having emission peaks both at a wavelength range of 440nm to 470nm and at 505nm to 530nm is



wherein a compound on the left side denotes a host crystal, and ions on the right side are emission centers contained in the phosphor.

17. (Original) The light source of Claim 15,

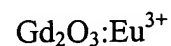
wherein the phosphor containing the trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

18. (Original) The light source of Claim 15,

wherein the phosphor containing the trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

19-24. (Cancelled)

25. (Currently Amended) ~~[[The]]~~ A light source of Claim 24, comprising:

a fluorescent lamp having a phosphor layer with at least 70% of wherein the phosphor layer contains, as major components being a combination of:

a phosphor containing bivalent ~~Europium~~ europium as an emission center and having a peak emission at a wavelength range of 440nm to 470nm;

a phosphor containing bivalent manganese as an emission center and having a peak emission at a wavelength range of 505nm to 530nm;

a phosphor containing trivalent terbium as an emission center and having a peak emission at a wavelength range of 540nm to 570nm; and

a phosphor containing trivalent europium as an emission center and having a peak emission at a wavelength range of 600nm to 620nm~~[[.]]~~ ,

whereby the light emitted has a whiteness no smaller than 85 with a visual clarity index no smaller than 110, the whiteness W being calculated according to the equation:

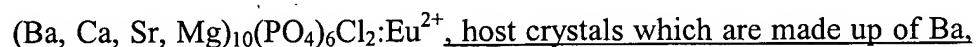
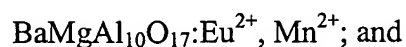
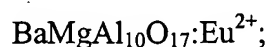
$$W = -5.3C + 100$$

where C is chroma of the light calculated as defined by the CIE 1997 Interim Color Appearance Model (simple version), and a ratio of radiant energy Q_v to radiant energy Q_g satisfies the inequality of a correlated color temperature $T(K)$:

$$Q_g/Q_v \geq -0.11 \times 10^4 / T + 0.30$$

where radiant Q_v is radiant energy with a wavelength in the range of 380nm to 780 nm and Q_g is radiant energy with a wavelength in the range of 505 nm to 530 nm.

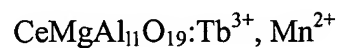
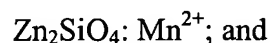
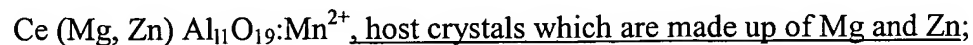
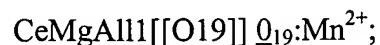
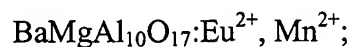
26. (Currently Amended) The light source of Claim 25,
wherein the phosphor containing the bivalent europium as an emission center and
having a peak emission at a wavelength range of 440nm to 470nm is composed of at least one of:



Ca, Sr and Mg

wherein compounds on the left side denote host crystals, and ions on the right side
are emission centers contained in the phosphors.

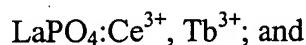
27. (Currently Amended) The light source of Claim 25,
wherein the phosphor containing the bivalent manganese as an emission center
and having a peak emission at a wavelength range of 505nm to 530nm is composed of at least
one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

28. (Original) The light source of Claim 25,

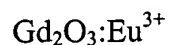
wherein the phosphor containing the trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

29. (Original) The light source of Claim 25,

wherein the phosphor containing the trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

30. (Currently Amended) ~~[[The]] A light source of Claim 24, comprising:~~

a fluorescent lamp having a phosphor layer with at least 70% of wherein the phosphor layer has, as major components being a combination of:

a phosphor containing both bivalent europium and bivalent manganese as emission centers and having emission peaks both at a wavelength range of 440nm to 470nm and at 505nm to 530nm;

a phosphor containing trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm; and

a phosphor containing trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm[.];

whereby the light emitted has a whiteness no smaller than 85 with a visual clarity index no smaller than 110, the whiteness W being calculated according to the equation:

$$W = -5.3C + 100$$

where C is chroma of the light calculated as defined by the CIE 1997 Interim Color Appearance Model (simple version); and

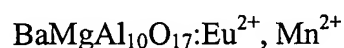
a ratio of radiant energy Q_v to radiant energy Q_g satisfies the inequality of a correlated color temperature $T(K)$:

$$Q_g/Q_v \geq -0.11 \times 10^4 / T + 0.30$$

where Q_v is radiant energy with a wavelength in the range of 380nm to 780 nm and Q_g is radiant energy with a wavelength in the range of 505 nm to 530 nm.

31. (Original) The light source of Claim 30,

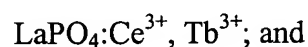
wherein the phosphor containing the bivalent europium and bivalent manganese as emission centers and having emission peaks both at a wavelength range of 440nm to 470nm and at 505nm to 530nm is



wherein a compound on the left side denotes a host crystal, and ions on the right side are emission centers contained in the phosphor.

32. (Original) The light source of Claim 30,

wherein the phosphor containing the trivalent terbium as an emission center and having an emission peak at a wavelength range of 540nm to 570nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

33. (Currently Amended) The light source of Claim 30,

wherein the phosphor containing the trivalent europium as an emission center and having an emission peak at a wavelength range of 600nm to 620nm is composed of at least one of:



wherein compounds on the left side denote host crystals, and ions on the right side are emission centers contained in the phosphors.

34-83. (Cancelled)